

California Cooperative
Snow Surveys
Bulletin 120-3-97

**State of California
The Resources Agency**

**Department of
Water Resources**

Water Conditions in California

Report 3 April 1, 1997



Pete Wilson
Governor
State of California

Douglas P. Wheeler
Secretary for Resources
The Resources Agency

David N. Kennedy
Director
Department of Water Resources

STATE OF CALIFORNIA

Pete Wilson, Governor

THE RESOURCES AGENCY

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COOPERATING AGENCIES

Public Agencies

Buena Vista Water Storage District
Central California Irrigation District
East Bay Municipal Utility District
Friant Water Users Association
Kaweah Delta Water Conservation District
Kern Delta Water District
Kings River Conservation District
Lower Tule River Irrigation District
Merced Irrigation District
Modesto Irrigation District
Nevada Irrigation District
North Kern Water Storage District
Northern California Power Agency
Oakdale Irrigation District
Omochumne-Hartnell Water District
Oroville-Wyandotte Irrigation District
Placer County Water Agency
Sacramento Municipal Utility District
South San Joaquin Irrigation District
Tri-Dam Project
Tulare Lake Basin Water Storage District
Turlock Irrigation District
Yuba County Water Agency

Private Organizations

J.G. Boswell Company
Kaweah River Association
Kings River Water Association
St. Johns River Association
Tule River Association
State Water Contractors

Municipalities

City of Bakersfield Water Department
City of Los Angeles Department of Water and Power
City and County of San Francisco Hetch Hetchy Water and Power

State Agencies

California Department of Forestry & Fire Protection
California Department of Water Resources

Public Utilities

Pacific Gas and Electric Company
Southern California Edison Company

Federal Agencies

U.S. Department of Agriculture
Forest Service (14 National Forests)
Pacific Southwest Forest and Range Experiment Station
Natural Resource Conservation Service
U.S. Department of Commerce
National Weather Service
U.S. Department of Interior
Bureau of Reclamation
Geological Survey, Water Resources
National Park Service (3 National Parks)
U.S. Department of Army
Corps of Engineers

Other Cooperative Programs

Nevada Cooperative Snow Surveys
Oregon Cooperative Snow Surveys

Summary of Water Conditions

April 1, 1997

For the second consecutive month weather conditions have been extremely dry in California. After the wettest pair of months in December and January, the two month period of February and March was among the driest in the record. Although the dryness has taken its toll on runoff, the water supply outlook is still good for most users this year.

Forecasts of runoff for the April through July period have been reduced 25 percent from one month ago but are still near average statewide due to good residual snowpack at high elevations. The highest percentages are in the southern Sierra; forecasts on the northern rivers are below average. Water year runoff forecasts are 155 percent of average, high because of midwinter flood runoff.

Snowpack water content is about 75 percent of average statewide on April 1 compared to 95 percent last year. Unseasonable warm weather during the 4th week of March caused early melting of a portion of the pack especially at lower elevations.

Precipitation during March was only about 30 percent of average, with very little in the southern regions. Precipitation since October 1 is 125 percent of average, with only the southern end of California below normal. Statewide seasonal precipitation last year was 110 percent of average.

Runoff so far this year has been more than ample, nearly twice average, at 195 percent, but much was unstorable flood flow. March runoff was below average however, at 80 percent, which included some early snowmelt. Last year runoff was 125 percent of average at this time. Estimated March runoff during March of the 8 major rivers of the Sacramento and San Joaquin River hydrologic regions was 2.5 million acre feet.

Reservoir storage is still good at 115 percent of average. The increase during March was less than average because of the dry conditions. Some of the large reservoirs are not expected to fill. Last year reservoir storage stood at 120 percent of average.

SUMMARY OF WATER CONDITIONS IN PERCENT OF AVERAGE

HYDROLOGIC REGION	PRECIPITATION OCTOBER 1 TO DATE	APRIL 1 SNOW WATER CONTENT	APRIL 1 RESERVOIR STORAGE	RUNOFF OCTOBER 1 TO DATE	APR-JULY RUNOFF FORECAST	WATER YEAR RUNOFF FORECAST
NORTH COAST	125	40	105	165	55	115
SAN FRANCISCO BAY	135	--	110	165	--	--
CENTRAL COAST	130	--	110	195	--	--
SOUTH COAST	90	--	115	95	--	--
SACRAMENTO RIVER	130	55	105	185	85	145
SAN JOAQUIN RIVER	150	100	125	305	115	180
TULARE LAKE	145	95	145	300	130	180
NORTH LAHONTAN	180	110	145	310	125	170
SOUTH LAHONTAN	85	120	85	125	125	125
COLORADO RIVER- DESERT	55	---	---	---	---	---
STATEWIDE	125	75	115	195	100	155

IN PERCENT OF AVERAGE TO DATE

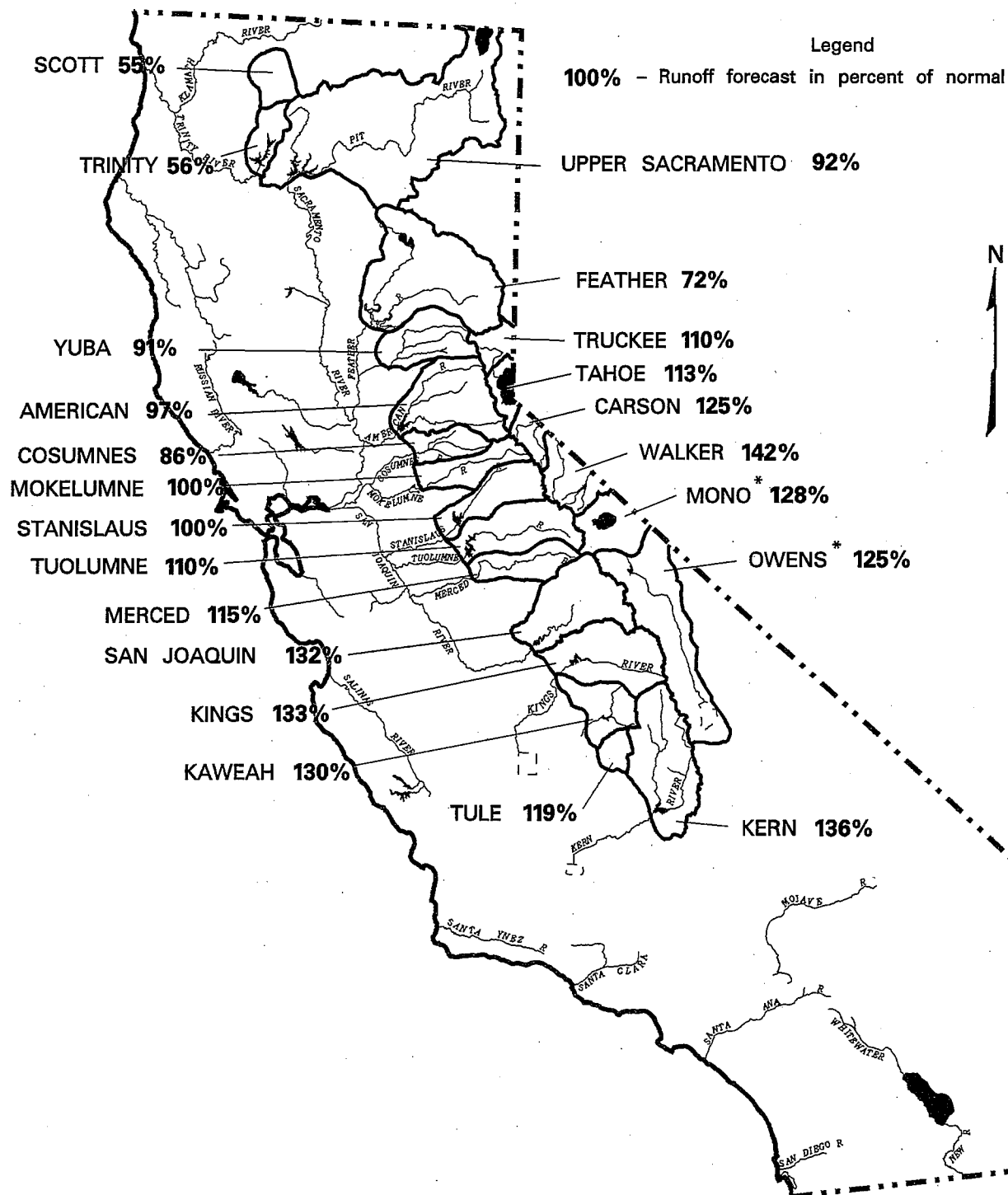
Statewide = 145%



- NC – North Coast
SF – San Francisco Bay
CC – Central Coast
SC – South Coast
SR – Sacramento River
SJ – San Joaquin
TL – Tulare Lake
NL – North Lahontan
SL – South Lahontan
CR – Colorado River–Desert

WATER YEAR IS OCTOBER 1 THROUGH SEPTEMBER 30

**FORECAST OF APRIL - JULY
UNIMPAIRED SNOWMELT RUNOFF**
April 1, 1997



* FORECAST BY DEPARTMENT OF WATER AND POWER, CITY OF LOS ANGELES

**MARCH 1, 1997 FORECASTS
APRIL-JULY UNIMPAIRED RUNOFF**

HYDROLOGIC REGION and Watershed	Unimpaired Runoff in 1,000 Acre-Feet (1)					
	HISTORICAL			FORECASTS		
	50 Yr Avg (2)	Max of Record	Min of Record	Apr-Jul Forecasts	Pct of Avg	80 % Probability Range (1)
SACRAMENTO RIVER						
Upper Sacramento River						
Sacramento River at Shasta Lake (3)	297	702	39	200	67%	
McCloud River at Shasta Lake	392	850	185	370	94%	
Pit River at Shasta Lake	1,056	1,796	480	1,100	104%	
Total Inflow to Shasta Lake	1,801	3,189	726	1,850	103%	1,270 - 2,650
Sacramento River above Bend Bridge, near Red Bluff	2,451	4,674	943	2,380	97%	1,630 - 3,450
Feather River						
Feather River at Lake Almanor near Prattville (3)	333	675	120	320	96%	
North Fork at Pulga (3)	1,028	2,416	243	980	95%	
Middle Fork near Clito (4)	86	518	4	80	93%	
South Fork at Ponderosa Dam (3)	110	267	13	105	95%	
Total Inflow to Oroville Reservoir	1,831	4,676	392	1,780	97%	1,300 - 2,640
Yuba River						
North Yuba below Goodyears Bar (3)	286	647	51	320	112%	
Inflow to Jackson Mdw and Bowman Reservoirs (3)	112	236	25	125	112%	
South Yuba at Langs Crossing (3)	233	481	57	250	107%	
Yuba River at Smartville	1,029	2,424	200	1,180	115%	860 - 1,740
American River						
North Fork at North Fork Dam (3)	262	716	43	330	126%	
Middle Fork near Auburn (3)	522	1,406	100	680	130%	
Silver Creek Below Camino Diversion Dam (3)	173	386	37	220	127%	
Total Inflow to Folsom Reservoir	1,261	3,074	229	1,660	132%	1,200 - 2,350
SAN JOAQUIN RIVER						
Cosumnes River at Michigan Bar	128	363	8	160	125%	110 - 240
Mokelumne River						
North Fork near West Point (5)	437	829	104	530	121%	
Total Inflow to Pardee Reservoir	459	1,065	102	600	131%	460 - 800
Stanislaus River						
Middle Fork below Beardsley Dam (3)	334	702	64	420	126%	
North Fork Inflow to McKays Point Dam (3)	224	503	34	280	125%	
Total Inflow to New Melones Reservoir	699	1,710	116	900	129%	700 - 1,200
Tuolumne River						
Cherry Creek & Eleanor Creek near Hetch Hetchy (3)	322	727	97	420	130%	
Tuolumne River near Hetch Hetchy (3)	606	1,392	153	820	135%	
Total Inflow to New Don Pedro Reservoir	1,184	2,682	301	1,680	142%	1,400 - 2,100
Merced River						
Merced River at Pohono Bridge (3)	362	888	80	520	144%	
Total Inflow to Lake McClure	611	1,587	123	900	147%	770 - 1,150
San Joaquin River						
San Joaquin River at Mammoth Pool (6)	1,014	2,279	235	1,490	147%	
Big Creek below Huntington Lake (6)	95	264	11	150	158%	
South Fork near Florence Lake (6)	202	511	58	290	144%	
Total Inflow to Millerton Lake	1,212	3,355	262	1,900	157%	1,550 - 2,350
TULARE LAKE						
Kings River						
North Fork Kings River near Cliff Camp (3)	239	565	50	360	151%	
Total Inflow to Pine Flat Reservoir	1,183	3,114	273	1,850	156%	1,500 - 2,250
Kaweah River at Terminus Reservoir	276	814	61	470	170%	390 - 580
Tule River at Success Reservoir	59	256	2	105	178%	85 - 140
Kern River						
Kern River near Kernville (3)	373	1,203	83	620	166%	
Total Inflow to Isabella Reservoir	442	1,657	84	770	174%	650 - 1,050

(1) See inside back cover for definition

(2) All 50 year averages are based on years 1946-1995 unless otherwise noted

(3) 50 year average based on years 1941-90

(4) 44 year average based on years 1936-79

(5) 36 year average based on years 1936-72

(6) 45 year average based on years 1936-81

**APRIL 1, 1997 FORECASTS
WATER YEAR UNIMPAIRED RUNOFF**

Unimpaired Runoff in 1,000 Acre-Feet (1)													
HISTORICAL			DISTRIBUTION								FORECASTS		
50 Yr Avg (2)	Max of Record	Min of Record	Oct Thru Jan*	Feb *	Mar *	Apr	May	Jun	Jul	Aug & Sep	Water Year Forecasts	Pct of Avg	80 % Probability Range (1)

856	1,964	165											
1,184	2,353	577											
3,078	5,150	1,484											
5,896	10,796	2,479	4,390	710	500	580	480	340	250	420	7,670	130%	7,200 - 8,520
8,518	17,180	3,294	6,210	1,030	710	750	620	380	280	510	10,490	123%	9,940 - 11,580

780	1,269	366											
2,417	4,400	666											
219	637	24											
291	562	32											
4,526	9,492	994	4,380	555	530	540	440	220	120	165	6,950	154%	6,550 - 7,790

564	1,056	102											
181	292	30											
379	565	98											
2,337	4,926	369	2,500	300	265	330	390	180	40	35	4,040	173%	3,850 - 4,450

616	1,234	66											
1,070	2,575	144											
318	705	59											
2,674	6,381	349	3,180	340	295	440	510	230	40	25	5,060	189%	4,860 - 5,610

378	1,253	20	610	73	35	50	40	17	3	2	830	220%	770 - 940
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626	1,009	197											
736	1,800	129	620	80	85	140	210	100	10	5	1,250	170%	1,170 - 1,410

471	929	88											
1,131	2,952	155	980	95	130	190	290	180	40	15	1,920	170%	1,770 - 2,150

461	1,147	123											
770	1,661	258											
1,857	4,430	383	1,540	165	235	300	480	410	110	30	3,270	176%	3,090 - 3,580

461	1,020	92											
952	2,859	150	925	105	115	180	280	190	50	15	1,860	195%	1,760 - 2,080

1,337	2,964	308											
112	298	14											
248	653	71											
1,753	4,642	362	1,065	180	220	300	570	540	190	95	3,160	180%	2,960 - 3,470

284	607	58											
1,647	4,294	383	815	145	190	300	600	500	170	90	2,810	171%	2,620 - 3,100
431	1,402	92	335	70	65	80	140	100	40	15	845	196%	780 - 940
135	615	16	226	46	31	30	25	13	2	2	375	278%	350 - 410

558	1,577	163											
694	2,309	175	365	95	115	140	210	170	80	45	1,220	176%	1,160 - 1,460

* Indicates observed runoff

**MARCH 1, 1997 FORECASTS
APRIL-JULY UNIMPAIRED RUNOFF**

HYDROLOGIC REGION and Watershed	Unimpaired Runoff in 1,000 Acre-Feet (1)				
	HISTORICAL			FORECASTS	
	50 Yr Avg (2)	Max of Record	Min of Record	Apr-Jul Forecasts	Pct of Avg
NORTH COAST					
Trinity River					
Total Inflow to Lewiston Lake	642	1,593	80	460	72%
Scott River					
Near Fort Jones	200	N/A	N/A	130	65%
Klamath River					
Total inflow to Upper Klamath Lake (3,4)	508	N/A	N/A	600	118%
NORTH LAHONTAN					
Truckee River					
Lake Tahoe to Farad accretions	264	713	58	390	148%
Lake Tahoe Rise (assuming gates closed, in feet) (3)	1.5	3.8	0.2	2.3	153%
Carson River					
West Fork at Woodfords	54	135	12	80	148%
East Fork near Gardnerville	183	407	43	280	153%
Walker River					
West Fork near Coleville	143	330	35	230	161%
East Fork near Bridgeport	61	209	7	120	197%
SOUTH LAHONTAN					
Owens River					
Total tributary flow to Owens River (3,5)	233	579	96	363	156%

(1) See inside back cover for definition

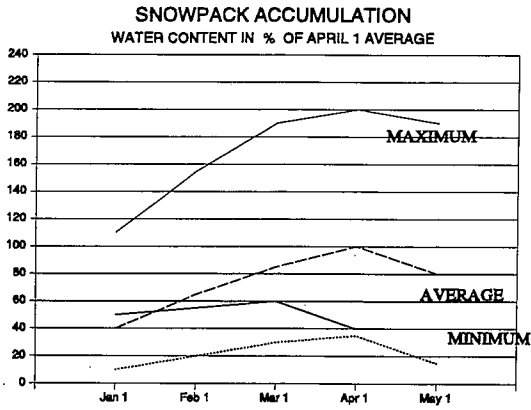
(2) All 50 year averages are based on years 1946-1995 unless otherwise noted

(3) 50 year average based on years 1941-1990

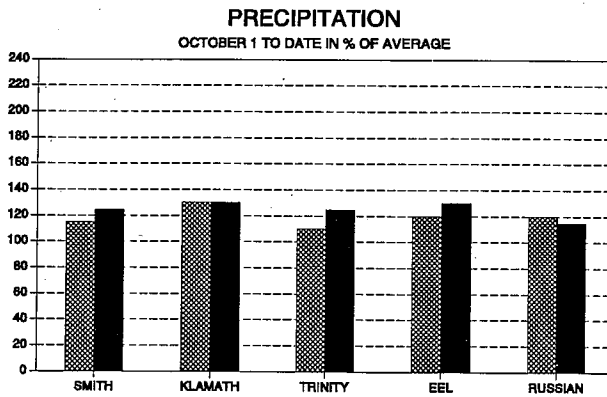
(4) Forecast by U.S. Natural Resources Conservation Service, Portland Oregon, for April through September.

(5) Forecast by Department of Water and Power, City of Los Angeles

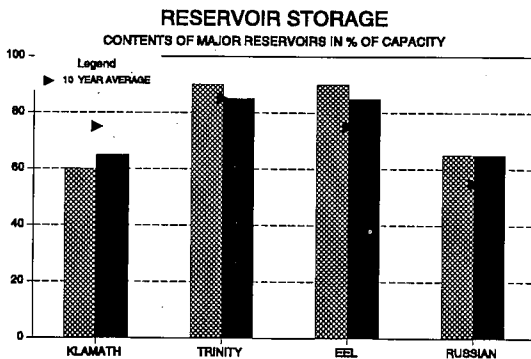
NORTH COAST REGION



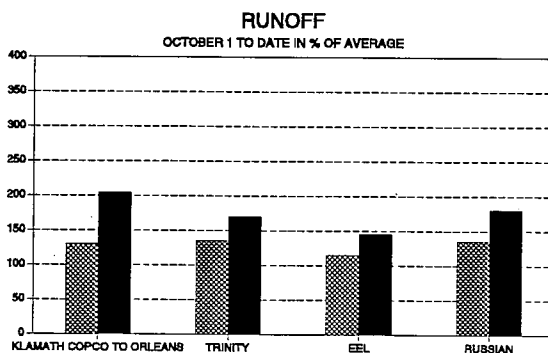
SNOWPACK - First of the month measurements made at 18 snow courses indicate an area wide snow water equivalent of 13.6 inches. This is 40 percent of the seasonal (April 1) average. Last year at this time the pack was holding 23.6 inches of water.



PRECIPITATION - Seasonal precipitation (October 1 through the end of last month) on this area was 125 percent of normal. Precipitation last month was about 60 percent of the monthly average. Seasonal precipitation at this time last year stood at 120 percent of normal.



RESERVOIR STORAGE - First of the month storage in 7 reservoirs was 2.6 million acre-feet which is 105 percent of average. About 85 percent of available capacity was being used. Storage in these reservoirs at this time last year was 110 percent of average.

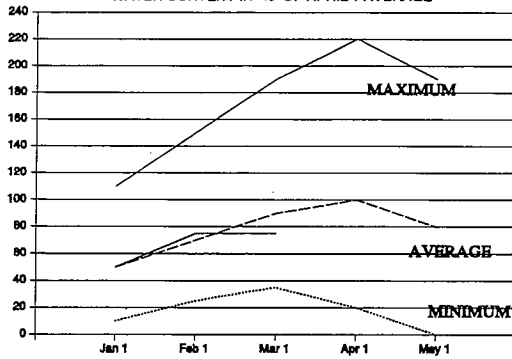


RUNOFF - Seasonal runoff of streams draining the area totaled 16 million acre-feet which is 165 percent of average for this period. Last year, runoff for the same period was 125 percent of average.

 LAST YEAR
  THIS YEAR

SNOWPACK ACCUMULATION

WATER CONTENT IN % OF APRIL 1 AVERAGE

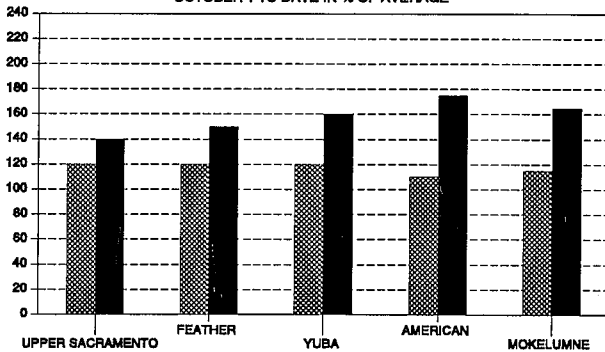


SACRAMENTO RIVER REGION

SNOWPACK - First of the month measurements made at 72 snow courses indicate an area wide snow water equivalent of 23.4 inches. This is 85 percent of the March 1 average and 75 percent of the seasonal (April 1) average. Last year at this time the pack was holding 25.0 inches of water.

PRECIPITATION

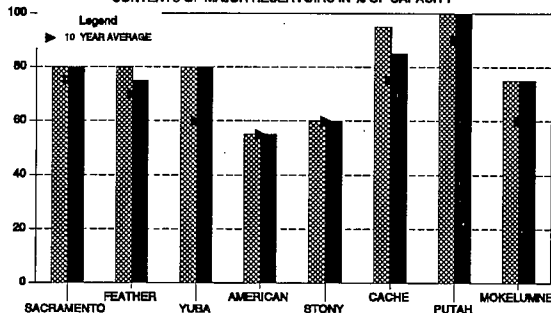
OCTOBER 1 TO DATE IN % OF AVERAGE



PRECIPITATION - Seasonal precipitation (October 1 through the end of last month) on this area was 150 percent of normal. Precipitation last month was about 15 percent of the monthly average. Seasonal precipitation at this time last year stood at 125 percent of normal.

RESERVOIR STORAGE

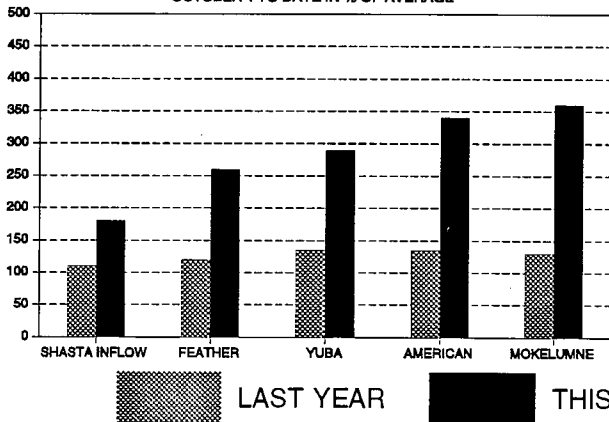
CONTENTS OF MAJOR RESERVOIRS IN % OF CAPACITY



RESERVOIR STORAGE - First of the month storage in 43 reservoirs was 12.4 million acre-feet which is 110 percent of average. About 75 percent of available capacity was being used. Storage in these reservoirs at this time last year was 115 percent of average.

RUNOFF

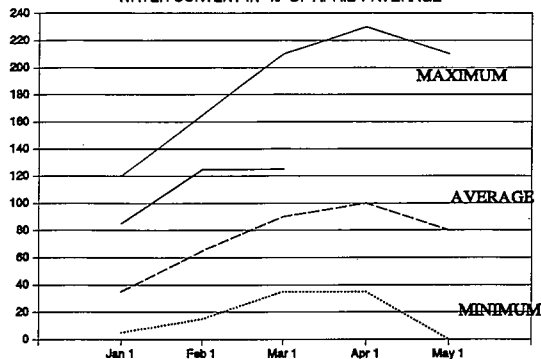
OCTOBER 1 TO DATE IN % OF AVERAGE



RUNOFF - Seasonal runoff of streams draining the area totaled 18.5 million acre-feet which is 225 percent of average for this period. Last year, runoff for the same period was 115 percent of average.

The Sacramento River Region 40-30-30 Water Supply Index is forecasted to be 12.1 million acre-feet assuming median meteorological conditions for the remainder of the year. This classifies the year as "wet" in the Sacramento-San Joaquin Delta according to the State Water Resources Control Board.

SNOWPACK ACCUMULATION



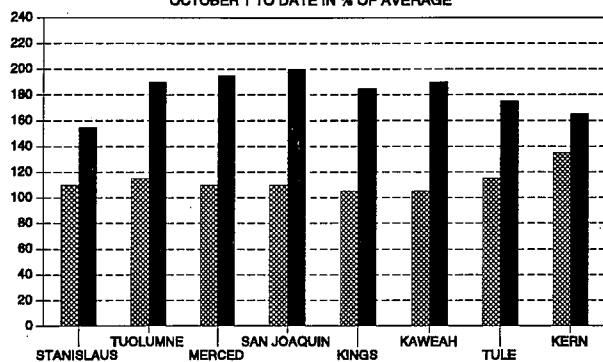
SAN JOAQUIN RIVER AND TULARE LAKE REGIONS

SNOWPACK - First of the month measurements made at 57 San Joaquin River Region snow courses indicate an area wide snow water equivalent of 37.0 inches. This is 140 percent of the March 1 average and 115 percent of the seasonal (April 1) average. Last year at this time the pack was holding 29.4 inches of water.

At the same time, 39 Tulare Lake Region snow courses indicated a basin-wide snow water equivalent of 29.7 inches which is 150 percent of the average for March 1 and 130 percent of the seasonal average. Last year at this time, the Region was holding 20.3 inches of water.

PRECIPITATION

OCTOBER 1 TO DATE IN % OF AVERAGE

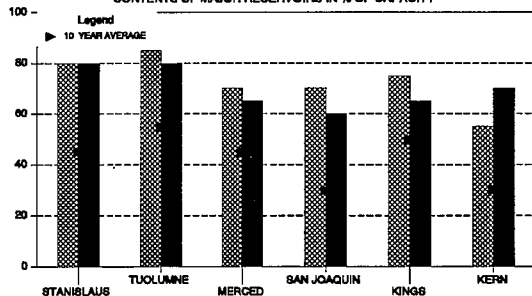


PRECIPITATION - Seasonal precipitation (October 1 through the end of last month) on the San Joaquin River Region was 180 percent of normal. Precipitation last month was about 10 percent of the monthly average. Seasonal precipitation at this time last year stood at 115 percent of normal.

Seasonal precipitation on the Tulare Lake Region was 175 percent of normal. Precipitation last month was 20 percent of the monthly average. Seasonal precipitation at this time last year stood at 115 percent of normal.

RESERVOIR STORAGE

CONTENTS OF MAJOR RESERVOIRS IN % OF CAPACITY

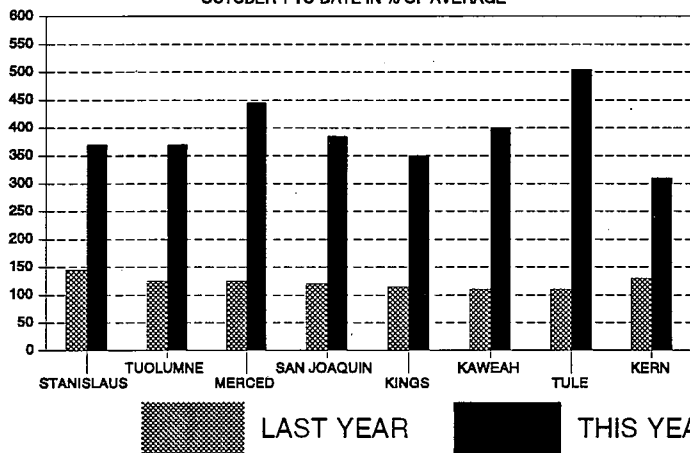


RESERVOIR STORAGE - First of the month storage in 33 San Joaquin River Region reservoirs was 8.8 million acre-feet which is 130 percent of average and about 80 percent of available capacity. Storage in these reservoirs at this time last year was 135 percent of average.

First of the month storage in 6 Tulare Lake Region reservoirs was 1.3 million acre-feet which is 165 percent of average. About 65 percent of available capacity was being used. Storage in these reservoirs at this time last year was 160 percent of average.

RUNOFF

OCTOBER 1 TO DATE IN % OF AVERAGE

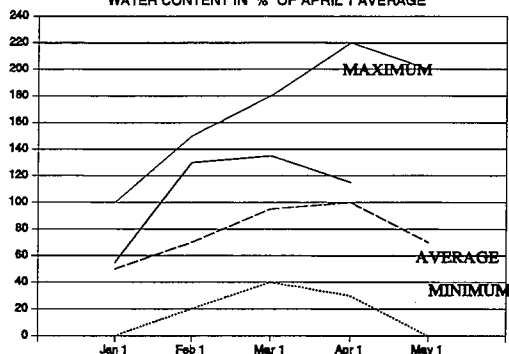


RUNOFF - Seasonal runoff of streams draining the area totaled 6.4 million acre-feet which is 385 percent of average for this period. Last year, runoff for the same period was 125 percent of average.

Stream runoff draining into the Tulare Lake Basin totaled 2.1 million acre-feet which is 360 percent of average for this period. Last year, runoff for this same period was 120 percent of average.

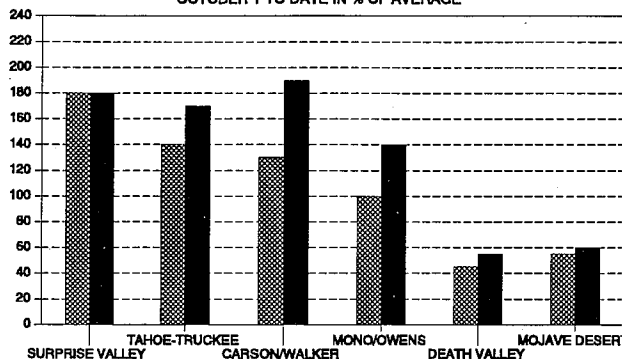
The San Joaquin River Region 60-20-20 Water Supply Index is forecasted to be 5.2 million acre-feet which classifies the year as "wet".

SNOWPACK ACCUMULATION
WATER CONTENT IN % OF APRIL 1 AVERAGE



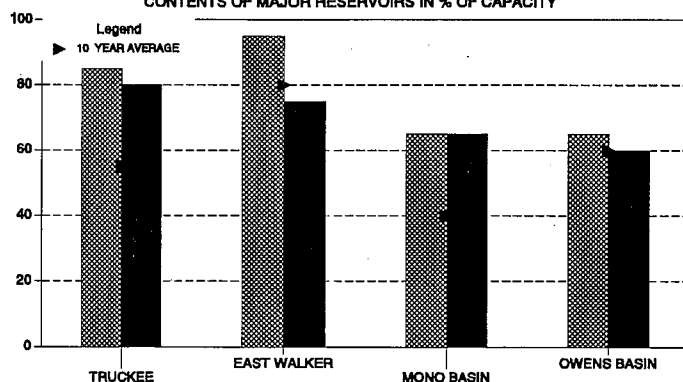
PRECIPITATION

OCTOBER 1 TO DATE IN % OF AVERAGE



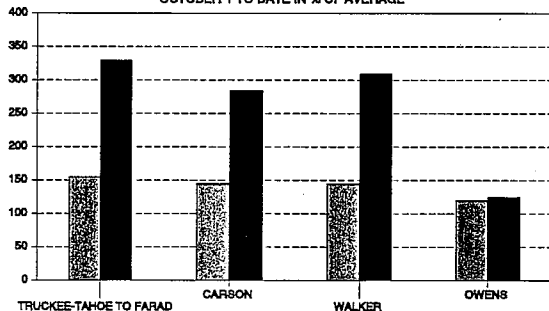
RESERVOIR STORAGE

CONTENTS OF MAJOR RESERVOIRS IN % OF CAPACITY



RUNOFF

OCTOBER 1 TO DATE IN % OF AVERAGE



LAST YEAR



THIS YEAR

NORTH AND SOUTH LAHONTAN REGIONS

SNOWPACK - First of the month measurements made at 18 North Lahontan snow courses indicate an area wide snow water equivalent of 35 inches. This is 110 percent of the seasonal (April 1) average. Last year at this time the pack was holding 32.8 inches of water.

At the same time, 19 South Lahontan snow courses indicated a basin-wide snow water equivalent of 31.0 inches which is 120 percent of the seasonal average. Last year at this time, the pack was holding 29.6 inches of water.

PRECIPITATION - Seasonal precipitation (October 1 through the end of last month) on the North Lahontan Region was 180 percent of normal. Precipitation last month was about 25 percent of the monthly average. Seasonal precipitation at this time last year stood at 145 percent of normal.

Seasonal precipitation on the South Lahontan Region was 90 percent of normal. Precipitation last month was 5 percent of the monthly average. Seasonal precipitation at this time last year stood at 75 percent of normal.

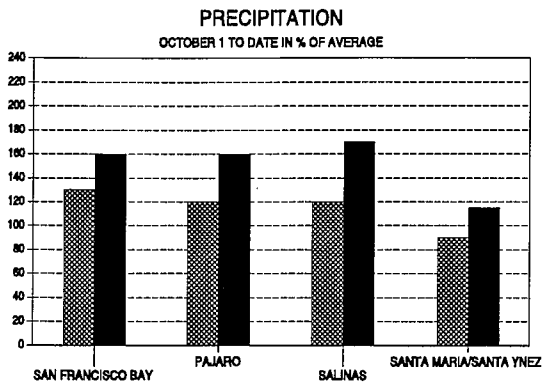
RESERVOIR STORAGE - First of the month storage in 5 North Lahontan Region reservoirs was 865 thousand acre-feet which is 145 percent of average. About 80 percent of available capacity was being used. Storage in these reservoirs at this time last year was 150 percent of average.

Lake Tahoe was 4.8 feet above its natural rim on April 1. First of the month storage in 8 South Lahontan Region reservoirs was 231 thousand acre-feet which is 85 percent of average. About 55 percent of available capacity was being used. Storage in these reservoirs at this time last year was 90 percent of average.

RUNOFF - Seasonal runoff of streams draining the North Lahontan area totaled 867 thousand acre-feet which is 310 percent of average for this period. Last year, runoff for the same period was 150 percent of average.

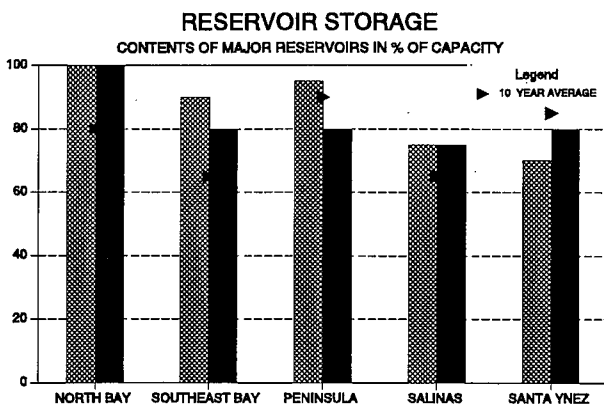
Seasonal runoff of the Owens River in the South Lahontan Region totaled 87 thousand acre-feet which is 125 percent of average for this period. Last year, runoff for this same period was 120 percent of average.

SAN FRANCISCO BAY AND CENTRAL COAST REGIONS



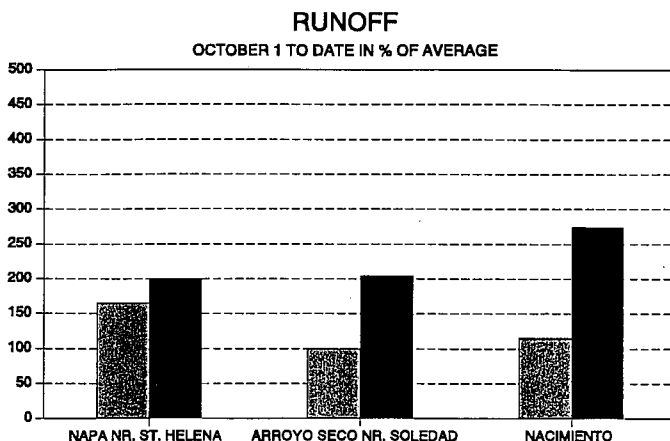
PRECIPITATION - Seasonal precipitation (October 1 through the end of last month) on the San Francisco Bay area was 155 percent of normal. Precipitation last month was about 10 percent of the monthly average. Seasonal precipitation at this time last year stood at 150 percent of normal.

Seasonal precipitation on the Central Coast area was 150 percent of normal. Precipitation last month was 5 percent of the monthly average. Seasonal precipitation at this time last year stood at 110 percent of normal.



RESERVOIR STORAGE - First of the month storage in 18 major Bay area reservoirs was 585 thousand acre-feet which is 120 percent of average. About 85 percent of available capacity was being used. Storage in these reservoirs at this time last year was 130 percent of average.

First of the month storage in 6 major Central Coast reservoirs was 737 thousand acre-feet which is 115 percent of average. About 80 percent of available capacity was being used. Storage in these reservoirs at this time last year was 115 percent of average.



RUNOFF - Seasonal runoff of the Napa River in the San Francisco Bay area totaled 103 thousand acre-feet which is 200 percent of average for this period. Last year, runoff for the same period was 160 percent of average.

Seasonal runoff of selected Central Coast streams totaled 527 thousand acre-feet, which is 250 percent of average for this period. Last year, runoff for this same period was 110 percent of average.



SOUTH COAST AND COLORADO RIVER AREAS

PRECIPITATION - October through February (seasonal) precipitation on the South Coast area was 90 percent of normal. March precipitation was less than 5 percent of the monthly average. Seasonal precipitation at this time last year was 75 percent of normal.

Seasonal precipitation on the Colorado Desert area was 55 percent of normal. Precipitation in February was 0 percent of average. Seasonal precipitation at this time last year stood at 20 percent of average.

RESERVOIR STORAGE - April 1 storage in 29 major South Coast area reservoirs was 1.5 million acre-feet or 115 percent of average. About 75 percent of available capacity was being used. Storage in these reservoirs at this time last year was 125 percent of average.

On April 1 combined storage in Lakes Powell, Mead, Mohave and Havasu was about 44 million acre-feet or about 120 percent of average. About 80 percent of available capacity was in use. Last year at this time, these reservoirs were storing 120 percent of average.

RUNOFF - Seasonal runoff from selected South Coast streams totaled 41 thousand acre-feet which is 95 percent of average. Seasonal runoff from these streams last year was 105 percent of average.

COLORADO RIVER - The April 1 snowpack in the Upper Colorado River basin according to U.S. Natural Resources Conservation Service reports was 125 percent of average, highest in the Dushesne at 145 percent and lowest in the Roaring Fork at 100 percent.

The April through July inflow to Lake Powell is forecast to be 11 million acre-feet, which is 142 percent of average.

CENTRAL VALLEY PROJECT

Based on April 1 conditions, Bureau of Reclamation April-July forecasts for runoff into CVP reservoirs have all fallen significantly. They are: Trinity--72% of average, Shasta--102% of average, American--94% of average, Stanislaus--105% of average, San Joaquin above Friant--128% of average. As of March 31, 1996 CVP storage was 9.5 million acre feet which is a decrease of 0.4 million acre feet compared to one year ago, and is approximately 116% of normal for that date.

The Bureau of Reclamation will announce updated water allocations for the CVP on April 15, 1997. Currently agricultural contractors north and south of the Delta are allocated 100% of their contract supply, urban contractors received 100% of contractual supply. Wildlife refuges received 100% of level II supplies. Sacramento River water rights settlement contractors and San Joaquin Exchange contractors remain at 100% supplies.

Friant Division allocations are currently at 100% Class I, with a sliding scale allocation for Class II supplies, ranging from 15% to 100% depending on timing of scheduled deliveries. Stanislaus River contractors received an allocation of 50,000 acre feet.

STATE WATER PROJECT

The extraordinarily dry February-March combination this year raises the possibility of not completely filling Lake Oroville this spring. Approval of water deliveries to SWP water supply contractors remains at 100 percent of each contractor's "Table A" entitlement or 100 percent of their request for 1997, whichever is less.

MAJOR WATER DISTRIBUTION PROJECTS

RESERVOIR STORAGE

(AVERAGES BASED ON PERIOD RECORD)

RESERVOIR	CAPACITY 1,000 AF	AVERAGE STORAGE 1,000 AF	STORAGE AT END OF FEBRUARY			
			1996 1,000 AF	1997 1,000 AF	PERCENT AVERAGE	PERCENT CAPACITY
STATE WATER PROJECT						
Lake Oroville	3,538	2,588	2,729	2,676	103%	76%
San Luis Reservoir (SWP)	1,062	935	1,077	1,105	118%	104%
Lake Del Valle	77	33	39	38	116%	50%
Lake Silverwood	73	66	39	11	17%	15%
Pyramid Lake	171	162	165	159	98%	93%
Castaic Lake	324	268	277	297	111%	92%
Perris Lake	132	115	120	121	104%	92%
CENTRAL VALLEY PROJECT						
Clair Engle Lake	2,448	1,897	2,074	2,049	108%	84%
Lake Shasta	4,552	3,377	3,694	3,575	106%	79%
Whiskeytown Lake	241	208	220	196	95%	81%
Folsom Lake	977	579	362	404	70%	41%
New Melones Reservoir	2,420	1,491	2,037	2,057	138%	85%
Millerton Lake	520	306	456	270	88%	52%
San Luis Reservoir (CVP)	971	764	948	874	114%	90%
COLORADO RIVER PROJECT						
Lake Mead	26,159	20,023	22,031	22,414	112%	86%
Lake Powell	25,002	15,410	20,692	19,321	125%	77%
Lake Mohave	1,810	1,641	1,666	1,683	103%	93%
Lake Havasu	619	537	570	586	109%	95%
EAST BAY MUNICIPAL UTILITY DISTRICT						
Pardee Reservoir	198	177	200	181	102%	92%
Camanche Reservoir	417	251	278	245	98%	59%
East Bay (4 reservoirs)	151	129	142	122	94%	81%
CITY AND COUNTY OF SAN FRANCISCO						
Hetch-Hetchy Reservoir	360	131	271	243	186%	67%
Cherry Lake	268	103	245	201	195%	75%
Lake Eleanor	26	10	21	24	243%	91%
South Bay/Peninsula (4 reservoirs)	225	168	216	198	118%	88%
CITY OF LOS ANGELES (D.W.P.)						
Lake Crowley	183	130	139	129	99%	70%
Grant Lake	48	30	43	45	150%	95%
Other Aqueduct Storage (6 res.)	83	75	59	63	84%	75%

TELEMETERED SNOW WATER EQUIVALENTS

APRIL 1, 1997

(AVERAGES BASED ON PERIOD RECORD)

BASIN NAME		INCHES OF WATER EQUIVALENT				
STATION NAME	ELEV	APRIL 1 AVERAGE	APR 1	PERCENT OF AVERAGE	24 HRS PREVIOUS	1 WEEK PREVIOUS
TRINITY RIVER						
Peterson Flat	7150'	29.2	18.1	62%	17.8	19.3
Red Rock Mountain	6700'	39.6	25.5	64%	25.5	26.8
Bonanza King	6450'	40.5	—	—	—	17.7
Shimmy Lake	6200'	40.3	—	—	—	—
Middle Boulder 3	6200'	28.3	7.8	28%	7.8	10.5
Highland Lakes	6030'	29.9	5.3	18%	6.5	10.7
Scott Mountain	5900'	16.0	7.0	44%	7.0	9.5
Mumbo Basin	5700'	22.4	3.8	17%	4.0	8.4
Big Flat	5100'	15.8	4.3	27%	4.3	6.4
SACRAMENTO RIVER						
Cedar Pass	7100'	18.1	17.9	99%	17.7	18.7
Blacks Mountain	7100'	12.7	8.1	64%	8.1	9.8
Sand Flat	6750'	42.4	—	—	—	29.0
Medicine Lake	6700'	32.6	13.9	43%	14.0	14.3
Adin Mountain	6350'	13.6	8.3	61%	8.5	10.1
Snow Mountain	5950'	27.0	—	—	—	19.0
Slate Creek	5600'	29.0	0.0	0%	0.0	2.1
Stouts Meadow	5400'	36.0	—	—	—	—
FEATHER RIVER						
Kettle Rock	7300'	25.5	16.1	63%	15.5	16.8
Grizzly Ridge	6900'	29.7	24.2	82%	24.2	27.2
Pilot Peak (DWR)	6800'	52.6	24.4	46%	24.0	29.6
Gold Lake	6750'	36.5	37.0	101%	37.1	37.1
Humbug	6500'	28.0	22.6	81%	22.7	26.4
Rattlesnake	6100'	14.0	7.1	51%	7.2	10.8
Bucks Lake	5750'	44.7	19.2	43%	19.3	19.4
Four Trees	5150'	20.0	0.0	0%	0.0	3.8
EEL RIVER						
Noel Spring	5100'	—	0.0	—	0.0	0.0
Plaskett Meadows	6000'	—	3.8	—	4.5	8.4
YUBA & AMERICAN RIVERS						
Lake Lois	8800'	39.5	—	—	—	—
Schneiders	8750'	34.5	50.5	146%	49.9	50.0
Caples Lake (DWR)	7800'	30.9	29.3	95%	29.0	30.2
Alpha	7600'	35.9	28.7	80%	28.7	31.9
Beta	7600'	35.9	29.3	82%	29.3	32.0
Silver Lake (DWR)	7100'	22.7	23.4	103%	23.6	28.7
Central Sierra Snow Lab	6950'	33.6	35.6	106%	35.6	40.2
Huysink	6600'	42.6	31.1	73%	31.1	33.7
Van Vleck	6700'	35.9	39.7	111%	39.4	41.3
Robbs Saddle	5900'	21.4	—	—	—	17.9
Greek Store	5600'	21.0	13.2	63%	13.2	16.5
Blue Canyon	5280'	9.0	0.0	0%	0.0	0.0
Robbs Powerhouse	5150'	5.2	0.0	0%	0.0	0.0
MOKELUMNE & STANISLAUS RIVERS						
Deadman Creek	9250'	37.2	32.4	87%	32.5	34.4
Highland Meadow	8800'	47.9	61.4	128%	61.2	63.5
Gianelli Meadow	8350'	55.5	51.2	92%	51.0	58.9
Lower Relief Valley	8100'	41.2	48.8	118%	49.5	50.1
Blue Lakes	8000'	33.1	33.8	102%	33.7	34.7
Mud Lake	7900'	44.9	63.2	141%	63.0	65.0
Stanislaus Meadow	7750'	47.5	49.9	105%	50.5	55.1
Bloods Creek	7200'	35.5	34.9	98%	35.0	37.3
Black Springs	6500'	32.0	18.5	58%	19.8	22.1
TUOLUMNE & MERCED RIVERS						
Dana Meadows	9800'	27.7	36.8	133%	36.8	38.2
Slide Canyon	9200'	41.1	58.9	143%	57.6	55.0
Snow Flat	8700'	44.1	—	—	—	—
Tuolumne Meadows	8600'	22.6	25.3	112%	25.3	28.0
Horse Meadow	8400'	48.6	—	—	—	—
Ostrander Lake	8200'	34.8	39.9	115%	39.9	43.1
Paradise Meadow	7650'	41.3	—	—	—	—
Gin Flat	7050'	34.2	27.8	81%	27.8	30.8
Lower Kibbie Ridge	6600'	27.4	14.7	54%	14.7	18.6

TELEMETERED SNOW WATER EQUIVALENTS

MARCH 1, 1997

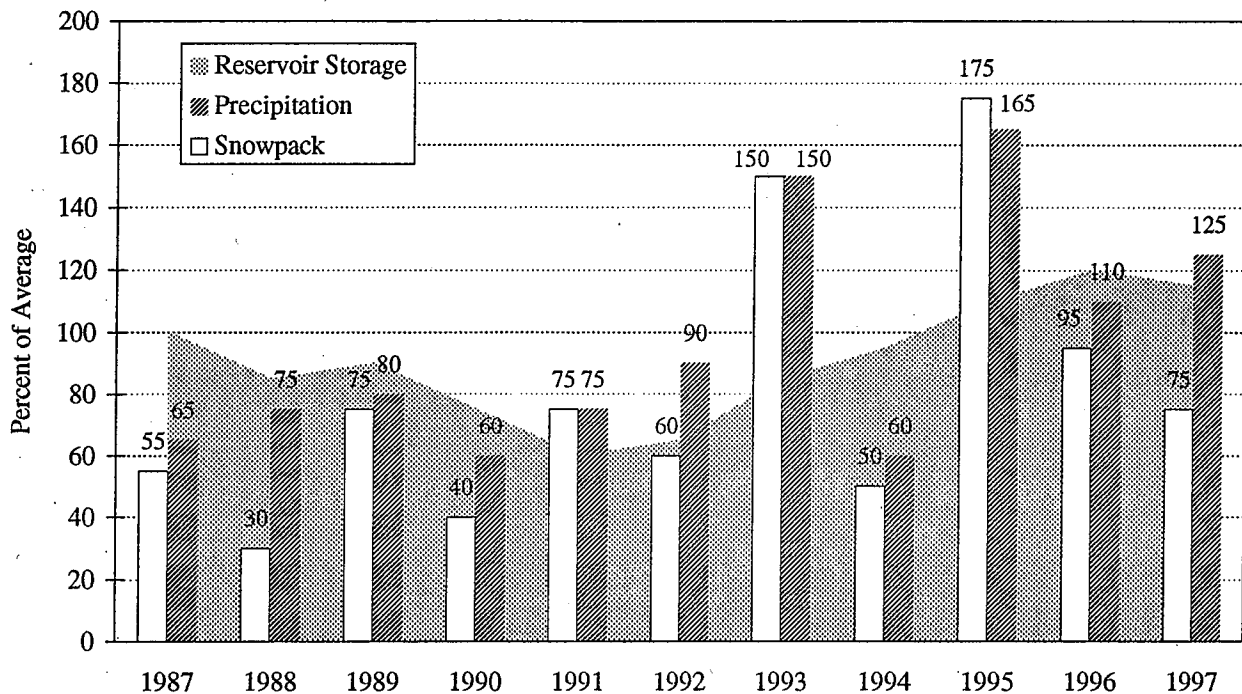
(AVERAGES BASED ON PERIOD RECORD)

		INCHES OF WATER EQUIVALENT				
BASIN NAME		APRIL 1		PERCENT	24 HRS	1 WEEK
STATION NAME	ELEV	AVERAGE	MAR 1	OF AVERAGE	PREVIOUS	PREVIOUS
SAN JOAQUIN RIVER						
Volcanic Knob	10100'	30.1	25.5	85%	26.1	27.5
Agnew Pass	9450'	32.3	—	—	—	—
Kaiser Point	9200'	37.8	—	—	—	—
Green Mountain	7900'	30.8	—	—	—	—
Tamarack Summit	7600'	30.5	31.3	103%	31.3	31.2
Chilkoot Meadow	7150'	38.0	29.3	77%	29.3	29.3
Huntington Lake (USBR)	7000'	20.1	—	—	—	—
Graveyard Meadow	6900'	18.8	28.0	149%	28.0	28.3
Poison Ridge	6900'	28.9	26.1	90%	25.3	25.9
KINGS RIVER						
Bishop Pass	11200'	34.0	40.0	118%	40.0	39.3
Charlotte Lake	10400'	27.5	39.8	145%	39.8	39.5
State Lakes	10400'	29.0	—	—	—	—
Mitchell Meadow	10375'	32.9	53.5	163%	53.5	53.4
Blackcap Basin	10300'	34.3	—	—	—	—
Upper Burnt Corral	9700'	34.6	50.3	145%	50.3	50.3
West Woodchuck Meadow	9100'	32.8	55.1	168%	54.9	53.1
Big Meadows (DWR)	7600'	25.9	26.4	102%	26.3	26.5
KAWEAH & TULE RIVERS						
Quaking Aspen	7200'	21.0	24.8	118%	24.7	24.0
Giant Forest (Corps)	6400'	10.0	16.4	164%	16.3	16.1
KERN RIVER						
Upper Tyndall Creek	11500'	27.7	43.6	157%	43.5	42.7
Crabtree Meadow	10700'	19.8	20.5	104%	20.5	20.5
Chagoopa Plateau	10300'	21.8	32.5	149%	32.5	31.8
Pascoes	9150'	24.9	45.5	183%	45.3	44.4
Tunnel Guard Station	8950'	15.6	20.6	132%	20.6	19.9
Wet Meadows	8900'	30.3	30.4	100%	30.4	31.1
Casa Vieja Meadows	8400'	20.9	20.3	97%	20.3	19.6
Beach Meadows	7650'	11.0	6.6	60%	6.3	8.6
SURPRISE VALLEY AREA						
Dismal Swamp	7050'	29.2	32.7	112%	32.5	31.9
TRUCKEE RIVER						
Mount Rose Ski Area	8850'	38.5	52.4	136%	52.9	56.1
Independence Lake (NRCS)	8450'	41.4	50.6	122%	50.4	49.9
Big Meadows (NRCS)	8700'	25.7	31.7	123%	31.5	30.7
Independence Camp	7000'	21.8	9.3	43%	9.5	10.2
Independence Creek	6500'	12.7	7.7	61%	8.1	8.5
LAKE TAHOE BASIN						
Heavenly Valley	8800'	28.1	34.1	121%	33.7	33.7
Hagans Meadow	8000'	16.5	22.1	134%	21.8	22.0
Marlette Lake	8000'	21.1	32.4	154%	32.2	30.5
Echo Peak 5	7800'	39.5	55.1	139%	55.1	55.0
Rubicon Peak 2	7500'	29.1	30.0	103%	30.1	30.3
Ward Creek 3	6750'	39.4	36.5	93%	36.4	36.5
Fallen Leaf Lake	6300'	7.0	5.4	77%	5.6	6.1
CARSON RIVER						
Ebbetts Pass	8700'	38.8	48.5	125%	48.5	49.2
Poison Flat	7900'	16.2	17.1	106%	17.1	18.1
WALKER RIVER						
Virginia Lakes	9200'	20.3	25.9	128%	25.8	25.6
Lobdell Lake	9200'	17.3	28.6	165%	28.6	28.0
Sonora Pass Bridge	8750'	26.0	35.8	138%	35.6	34.9
Leavitt Meadows	7200'	8.0	13.7	171%	13.7	13.0
OWENS RIVER/MONO LAKE						
Gem Pass	10750'	31.7	47.7	150%	47.7	47.7
Sawmill	10300'	19.4	21.6	111%	21.6	22.2
Cottonwood Lakes	10200'	11.6	19.9	172%	19.9	19.9
Big Pine Creek	9800'	17.9	16.3	91%	16.3	16.3
South Lake	9600'	16.0	25.6	160%	25.6	25.3
Mammoth Pass (USBR)	9500'	42.4	49.8	117%	49.8	49.4
Rock Creek Lakes	10000'	14.0	18.0	129%	17.9	17.9

NORMAL SNOWPACK ACCUMULATION EXPRESSED AS A PERCENT OF APRIL 1ST AVERAGE

AREA	JANUARY	FEBRUARY	MARCH	APRIL	MAY
Central Valley North	45%	70%	90%	100%	75%
Central Valley South	45%	65%	85%	100%	80%
North Coast	40%	60%	85%	100%	80%

April 1 Statewide Conditions



SNOWLINES

THE FUTURE of the Central Sierra Snow Lab is much brighter than a month ago. The lab manager, Randall Osterhuber, has been hired by UC Berkeley and relatively few details remain to be resolved for UC Berkeley to assume responsibilities for the lab. Any agency in need of a convenient site for testing nearly any sort of hydrologic instrument should contact the Central Sierra Snow Lab at 916-426-0318.

MARCH continued the extremely dry conditions started in February throughout most of California. The unprecedented lack of precipitation in these two, normally wet months, has resulted in a significant drop in many of the forecast volumes from those published on February 1. As an example December and January were the third wettest on record for a group of selected sites in the Kern while February and March were the driest on record for those respective combinations of two month periods.

THE AGENDA for the joint meeting of the Western Snow Conference with the Eastern Snow Conference and the Canadian Geophysical Union in Banff, Alberta Canada has finally been published and there are a number of presentations of interest. The overall meeting dates are May 4-8. The sessions for the WSC will be concentrated in three days starting on Monday May 5. For further information try <http://www.geo.ucalgary.ca/~wu/cguconf.html> or contact Frank Gehrke at 916-574-2635.

SNOWPACK - Snow data is a major index of spring and summer runoff from Sierra Nevada watersheds. April 1 data historically reflects the magnitude of the snowpack at or near the maximum seasonal accumulation. Averages are based on April 1 data for the period 1946-1995 (50 years, except for data sites established after 1941).

PRECIPITATION - Averages are based on April 1 data for the period 1946-1995 (50 years, except for data sites established after 1941).

RUNOFF AND FORECASTS - Runoff data and runoff forecasts are shown as unimpaired values. Unimpaired runoff represents the natural water production of a river basin, unaltered by upstream diversions, storage, or by export or import of water to or from other watersheds. Forecast of runoff assumes median conditions subsequent to the date of forecast.

Runoff probability ranges are statistically derived from historical data. The 80 percent probability range is comprised of the 90 percent exceedence level value and the 10 percent exceedence level value. This means that actual runoff should fall within the stated limits eight times out of ten.

Runoff averages for most streams are based on the period 1946-1995. For more details contact California Cooperative Snow Surveys, P.O. Box 942836, Sacramento, CA 94236-0001, (916) 574-2635 or gridley@water.ca.gov.

INDICES OF WATER AVAILABILITY

The Sacramento River Hydrologic Region 40-30-30 Water Supply Index. The 40-30-30 represent the percentage weight given to the three variables in the formula for the index. The first variable is the forecasted unimpaired runoff from April through July (40 Percent). The second variable is the forecasted unimpaired runoff from October through March (30 Percent). The third variable is the previous year's index with a cap to account for required flood control releases during wet years. The basins used in this computation are those used in the Sacramento River water year unimpaired runoff.

The Sacramento River water year unimpaired runoff is the sum of: Sacramento River above Bend Bridge, Feather River Inflow to Lake Oroville, Yuba River near Smartville and American River Inflow to Folsom Lake.

The San Joaquin River Hydrologic Region 60-20-20 Water Supply Index. In a similar manner, the 60-20-20 represents the percentage weights on April through July runoff, October through March runoff and previous year's index. The San Joaquin River unimpaired runoff is the sum of: Stanislaus River Inflow to New Melones Lake, Tuolumne River Inflow to New Don Pedro Reservoir, Merced River Inflow to Lake McClure and San Joaquin River Inflow to Millerton Lake.

Prior month unimpaired runoff is the sum of the runoff in the eight major rivers used in the two above indices.

A flow of 160,000 CFS nearly engulfing Yuba County Water Agency Narrows #2 Powerhouse on January 2, 1997. The powerhouse is just downstream from Englebright Dam on the Yuba River.

Photo by Dave Ward, Pacific, Gas and Electric Company

State of California – The Resources Agency
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